

High Performance Wafer-Based Capillary Electrochromatography, Phase II

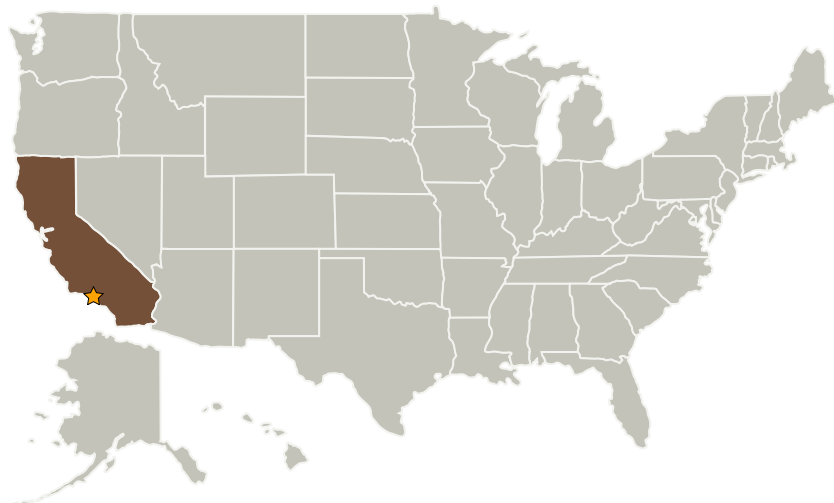
Completed Technology Project (2005 - 2006)



Project Introduction

The Phase II research comprises designing, constructing, and testing a chip-based capillary electrochromatography (CEC) prototype for separation and analysis of organic and inorganic molecules including amino acids and ions. The innovation of the proposed technology stems from its ability to achieve high sample retention and selectivity and yet maintain high separation efficiency, thus filling an important gap between the current technologies of capillary electrophoresis (CE) and high performance liquid chromatography (HPLC). Such microfluidics devices will enable analyte samples to be prepared, processed, and analyzed in "lab-on-a-chip" (LOC) type instrumentation in Micro Laboratories applications. In addition, they will be engineered for integration with established LOC analysis systems. The Phase II Research will address issues related to the performance and production methods for the technology. Commercial devices based on the Phase II prototype will be constructed and subsequently refined and commercialized during Phase III.

Primary U.S. Work Locations and Key Partners



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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Los Gatos Research	Supporting Organization	Industry	Mountain View, California

Primary U.S. Work Locations

California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.1 Cryogenic Systems
 - └ TX14.1.2 Launch Vehicle Propellant